EDUCATION STATISTICS

THEMES

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1. UIS EDUCATION DATA – COLLECTION, PRODUCTION AND DISSEMINATION

What is the role of the UIS?
The Institute produces internationally accepted methodologies to measure and monitor trends at national and global levels. It delivers comparative data for countries at all stages of development to provide a cross-national perspective on education, science and technology, culture, and communication.

Based in Montreal (Canada), the UIS was established in 1999 to meet the growing need for reliable and policy-relevant data. The Institute serves Member States, UNESCO and the UN system, as well as a range of intergovernmental and non-governmental organizations, research institutes and universities. More about the UIS

Will the UIS report data for the new Agenda 2030 for Sustainable Development adopted by UN Member States on 25 September 2015?
The UIS is the official United Nations agency responsible for the collection of education data. Up to 2015, it was responsible for the indicators to monitor the Millennium Development Goals (MDGs) related to universal primary education and gender parity in primary and secondary education, as well as the Education for All (EFA) goals and will continue to contribute to the monitoring of the new goal and targets. More about the UIS and international goals

Which international organizations use education statistics produced by the UIS?
The UIS is the main source of education data for the EFA Global Monitoring Report (UNESCO), the Millennium Development Goals Report and the related database (UNSD), the World Development Indicators and the World Development Report (World Bank), the Human Development Report (UNDP), State of the World's Children (UNICEF) and many others.

Does the UIS provide the education data used in the calculation of the Human Development Index in the UN Development Programme's Human Development Report?
The education component of the Human Development Index (HDI) in the *Human Development Report* by UNDP is calculated from two indicators generated by the UIS: expected years of schooling and mean years of schooling. Data on expected years of schooling are published in the UIS Data Centre under the name 'school life expectancy'. Data on mean years of schooling (MYS), also available in the UIS Data Centre, are calculated by the UIS from data on educational attainment. For countries without UIS estimates of MYS, UNDP uses MYS estimates from the Barro-Lee dataset on educational attainment, as well as its own calculations. Estimates by Barro and Lee are based on educational attainment statistics from the UIS and other sources. More about the HDI and mean years of schooling

Where do UIS data on education come from?
The UIS collects education statistics annually from official national statistical authorities. Each Member State designates the statistical authorities which respond to UIS questionnaires. In many cases, it is the ministry of education or the national statistical office which submits education data to the UIS. The information collected includes data on education programmes, access, participation, progression, completion, internal efficiency, and human and financial resources by all levels of education.

How does the UIS collect education data?
Each UNESCO Member State submits education data to the UIS through one of two surveys. Most UNESCO Member States respond annually to the UIS Survey of Formal Education. Other countries, mostly Member States of the European Union or the Organisation for Economic Co-operation and Development take part in the UIS-OECD-Eurostat (UOE) survey. This survey gathers more detailed education statistics than the UIS survey. More about UIS questionnaires

What steps does the UIS take to review national data and produce cross-nationally comparable indicators?
First, data are carefully reviewed to ensure that they are complete and comply with international standards and definitions, such as the International Standard Classification of Education (ISCED). A series of automatic checks are then run to detect errors within the data submission and data are compared to available time series.

Second, the UIS sends a detailed data report to the respondent who submitted the country data, documenting the issues found during data processing and requesting clarification and/or updated figures. Typical issues include the lack of metadata to explain why data are incomplete or missing and inconsistencies within the data submitted. During this review, the UIS encourages countries to make estimates for missing data so that data are internationally comparable and complete. After this consultation, the UIS considers the data ready for indicator calculation. On average, it takes two months to complete this data review process.

Third, in order to produce complete and internationally comparable datasets, the UIS must sometimes generate estimates and impute missing data. The Institute's estimates are based on information in national publications, official websites and other reliable sources of data (e.g. household surveys). Once the estimates have been generated, indicators are calculated and then standard checks are performed for quality assurance.

Finally, the UIS sends a file with calculated education indicators to national authorities for their review. This file includes indicators from 1999 to the latest year submitted by the country. If no major concerns are raised, the indicators are subsequently published by the UIS.

Are data from the UIS available free of charge?
There is no cost to access UIS data from UIS.Stat.

How should data from the UIS Data Centre be cited?
Source: UNESCO Institute for Statistics (UIS) database, http://data.uis.unesco.org, [date of extraction].

2. UIS DATA CENTRE

Why is UIS.Stat the leading database of cross-nationally comparable statistics on education?
The UIS Data Centre provides access to UIS.Stat, the only online database which provides internationally comparable statistics in the areas of education, science and technology, culture, and communication. The Data Centre is regularly updated; education data are added or revised twice a year. Because the UIS is the world depository for education data, it provides the most up-to-date statistics to monitor progress towards the education targets of international goals such as the Millennium Development Goals, Education for All, and the new Sustainable Development Goals. The UIS employs rigorous standards and methodologies in its indicator calculation to ensure that its data are cross-

nationally comparable. In fact, the UIS is the primary data source for education statistics in many other online databases, such as the World Bank EdStats.

How often are the education data updated in the online UIS database, UIS.Stat?
The UIS releases education data two times per year, in May and November. More about UIS.Stat.

Why is there a delay in the release of current education data?
The UIS strives to provide the most recent data available at the time of the UIS education data releases, which occur in May and November. A combination of factors contribute to the time lag which exists between the current year and the reference year of education data published. First, the timing of the academic year varies across countries: broadly speaking, the school year in countries north of the Equator occurs from September to June, while in countries south of the Equator it occurs from January to December. This affects when national enrolment data are collected and sent to the UIS. In addition, the UIS follows a multi-stage process to produce and publish internationally comparable data series.

Why are certain data or indicators missing in the online UIS Data Centre?
There are a variety of reasons why data are missing for a country or indicator. Most commonly, the UIS did not receive all data necessary to calculate the indicator for the country in a particular year. Sometimes, indicators are not published if the UIS or the country identifies inconsistencies in data that have been reported. In such cases, the UIS will engage in discussions with the country to resolve the issue.

Where can I find the most recent literacy and educational attainment statistics?
- Go to UIS.Stat at http://data.uis.unesco.org.
- Click on "Education" – "Education".
- Click on "Literacy" or "Educational Attainment".

How often are the literacy and educational attainment data updated in UIS.Stat?
Literacy data in UIS.Stat are updated annually around June. To mark International Literacy Day (8 September) each year, the UIS publishes a fact sheet that features maps, graphs and data analysis.

Educational attainment data and estimates of mean years of schooling (MYS) in UIS.Stat are updated annually around December.

Why are literacy data missing for most developed countries?
Literacy statistics in the database of the UIS generally refer to the "ability to read and write, with understanding, a short, simple statement about one's everyday life". National data on literacy are typically collected with household surveys or population censuses that rely on this definition of literacy although the questions asked in the surveys vary between countries. An overview of national definitions is available in the file "General metadata on national literacy data" in the UIS Data Centre. In many cases, UIS literacy statistics are based on data sources that use a self-declaration method: respondents are asked whether they and the members of their household are literate, as opposed to being asked a more comprehensive question or to demonstrate the skill.

Most industrialized countries have reached a level of development at which the majority of the population is considered to be able to read and write. For this reason, most of these countries no longer collect data that can be used to divide the population in a "literate" and "illiterate" part. For example, the US Census Bureau explains on its website "we have not collected data on literacy for many years".

Instead of asking about the simple "ability to read and write, with understanding, a short, simple statement about one's everyday life" these countries are interested in the level of literacy skills of individuals. For this, more detailed assessments of literacy are required, for example the Survey of Adult Skills that was carried out as part of the Programme for the International Assessment of Adult Competencies (PIAAC) by the OECD. Data like those collected with PIAAC are not directly comparable with the results of simple self-declaration of the ability to read and write in a household survey or

census. The data from PIAAC and similar assessments are therefore not suitable to divide the population in a literate and illiterate part.

What kind of data (prior to 1999) does the UIS have? Where can I find such data?
UIS data on enrolment, repeaters, teachers and all related indicators are available from the reference year 1970. Literacy data are also available from 1970.
– Go to UIS.Stat: http://data.uis.unesco.org
– Click on "Education".
– Choose one of the tables that appear under the different themes (participation, progress, human resources, etc.).
– To change the range of years displayed, click on the parameter "Time" in the top left hand corner of the table.
– Historical data can be found by selecting either a "time range" or "time period" and selecting the required years from 1970 onwards.

Where can I send questions or requests for UIS data?
Please send your data requests to uis.datarequests@unesco.org

3. EDUCATION INDICATOR METHODOLOGY

Why do national and international education data sometimes differ?
Education statistics produced by the UIS may differ from those in national statistical yearbooks or other national publications. Most discrepancies are due to differences in the underlying data (population or economic data), methodology used to calculate indicators, or the classification of education systems.

National and international education statistics use the same basic education data (e.g. school enrolment). However, the data used for the denominator can vary (e.g. population estimates). Population estimates are used to calculate a wide range of education statistics based on age, such as net enrolment rates. In most cases, national and international population estimates are extracted from the same data source (a recent census or household survey), but they may not use the same methodology. To ensure methodological consistency across all countries, the UIS uses the United Nations Population Division population estimates. These are based on a single, reliable methodology that is internationally accepted. United Nations agencies use these estimates to calculate a variety of socioeconomic and health indicators, including those related to the Millennium Development Goals. These estimates are updated every two years and disaggregated by sex and single year of age.

Similar concerns of international comparability apply to the use of economic data, which are used to calculate education finance statistics. The UIS uses World Bank economic data on national income and output, such as gross domestic product. Differences between education finance statistics from the UIS and other sources may therefore arise due to the source of the economic data.

In addition, education statistics may appear to differ due to differences in the classification of education systems at the national or international level. For example, a country may provide statistics on a basic education programme lasting nine years. However, at the international level, these statistics might be disaggregated into two levels of education: primary (e.g. grades 1 to 6) and lower secondary education (e.g. grades 7 to 9). The UIS uses the International Standard Classification of Education (ISCED) to ensure its indicators for primary, secondary and tertiary education are internationally comparable. More about ISCED

What kind of disaggregated data does the UIS produce?
In general, UIS education statistics are calculated for the total, male and female populations, in order to measure progress on sex-based disparities. The UIS also prepares averages for countries grouped by geographical region (according to UNESCO, UNICEF and other partner agency regional classifications) and by income group (according to World Bank classifications). Where these groupings are not included

in UIS.Stat, they can be requested by writing to uis.datarequests@unesco.org . Regional averages for country groups linked by another factor, such as religion or language, are not available.

Data submitted by national authorities are generally acquired from administrative sources, which often do not include information on area of residence (urban or rural) or household wealth. However, education statistics based on household surveys generally include several sociodemographic characteristics which make analysis of these and other sub-national groups possible, for example by the educational attainment of the household head, location or household wealth quintile.

What country groupings does the UIS use? Where can I find in which region countries belong?
UIS.Stat displays the following five regions: UIS Regions, Millennium Development Goals Regions, Education for All Regions, UNESCO Regions (which are the continents of the world with North and South America available separately) and World Bank income groupings. The regional and country profiles landing page uses the UIS regions in the Data Centre.

In addition, the UIS provides data to several partner agencies according to their own country groupings. These groupings may be organized by geographical location, by levels of income or development, or by other characteristics.

In order to find to which UIS region a country belongs, go to the regional and country profiles landing page, type the name of the country in the search box, and the name of the UIS region to which the country belongs will automatically appear. The Institute can provide data on request by other country groupings by contacting uis.datarequests@unesco.org.

Does the UIS collect data on special education and students with disabilities?
UIS education data include students with disabilities and special education needs. However, disaggregated data on this group of students are not currently collected.

Does the UIS collect data on non-formal or adult education?
The main UIS education data collection currently gathers data on formal education systems including both formal initial education and formal adult education. Formal initial education is the institutionalised and intentional education of individuals before their first entrance to the labour market. It is planned through public organisations and recognised public bodies. Formal adult education may be designed as second chance programmes for youth or adults and offered in the same or similar formal settings as initial education. They do not have the same typical entry age as equivalent programmes in initial education and may have a different, usually shorter, duration.

Why does the UIS revise certain indicator estimates over time?
Indicators may be revised when the UIS receives updated underlying data, such as population estimates, economic data or information about the education system.

Every two years, the United Nations Population Division (UNPD) releases new population projections and revised estimates for previous years. These population estimates and projections are a key component in the calculation of many UIS education indicators. The UIS systematically recalculates its indicators using the new population data in order to provide the most accurate information possible and allow comparison of trends over time. For example, revised data for high-population countries can have a significant impact on national, regional and global estimates of the number of out-of-school children.

Similarly, indicators based on economic data, such as education finance, are revised in line with biannual data updates from the World Bank.

Revisions to UIS indicators also result from efforts to improve the classification of education systems. The UIS works closely with national statisticians to map their education systems according to the International Standard Classification of Education (ISCED). Changes in these mappings can result in revised indicator estimates.

From time to time, countries may review their past data and submit amendments to the UIS, which result in changes to certain indicator estimates.

How does the UIS calculate regional averages?
Regional averages for education data
When calculating regional averages for education indicators there are generally missing data. In these cases, the regional average is an approximation of the unknown real value.

At the UIS, regional averages are derived from both publishable and imputed national data. Publishable data are the data submitted to the UIS by Member States or the result of an explicit estimation made by the Institute based on pre-determined standards. In both cases, these data are sent to Member States for review before they are considered publishable by the UIS.

When data are not available for all countries in the region, the UIS imputes national data for the sole purpose of calculating regional averages. These imputed data are not published.

There are two basic steps in the calculation of regional figures:

i)   Complete the data series by estimating the values for missing data using imputation methodology.;

ii)   Once the data series is complete, the calculation method of regional figures differs depending on whether the indicator is an absolute number (such as the number of children out of school) or a ratio (such as the net enrolment rate).

a) In the case of absolute numbers, the regional or global average is simply the sum of publishable and imputed values of the given indicator for the countries in the given region.

b) In the case of ratios, the regional average is calculated as the weighted average of the given ratio using its denominator as weight. For example, the regional average of the gross enrolment ratio is weighted according to the country's school-age population with respect to the region.

The UIS assigns a quality rating to regional averages based on two factors: the extent to which it is based on imputed values and (where applicable) the time lag between the year of the publishable value used in the imputation and the reference year of the regional average. In other words, an imputed value for a country based on publishable data which is two years older than the reference year is generally considered of higher quality than an imputed value based on publishable data which is five years older.

Published regional averages can be divided into two groups based on the use of imputed data:

i) *Regional averages without any qualifier:* at least 60% of the weighted data used are publishable for countries in the region;

ii) *Regional averages marked as a UIS estimate:*
   – less than 60% of the weighted data used are publishable for countries in the region, and
   – at least 33% of the weighted data used are publishable; or
   – at least 33% of the weighted data used are imputed based either on:
      a) publishable data from one year before **or** after the missing year;
      b) publishable time series data from before **and** after the missing year, where the time lag between the closest available year and the missing year is no more than four years.

Regional averages for literacy data
The UIS publishes regional and global literacy data using the time periods 1975-1984, 1985-1994, 1995-2004 and 2005-2014, which correspond to international census decades. When calculating a regional average for these periods, the UIS uses available observed data or Global Age-specific Literacy Projections (GALP). An average for each census decade, weighted by the population of the country or territory within the region, is used to calculate the regional or global figures. All countries and territories with UN or national population estimates are included in the regional figures. UIS estimates are used for countries with missing data. More about the regional average for literacy

How are missing values imputed to calculate regional averages?
To calculate a robust regional average, all countries in a given region must have data available. However, due to the lack of education data from some countries, the UIS must impute or generate a value for the missing data in order to create a complete regional data set. These imputed national data are produced by the UIS for the purpose of generating regional averages and are not published. The UIS assigns a quality rating to all regional averages to indicate the extent to which the calculation was based on imputed data.

The UIS imputation method aims to produce estimates that are as unbiased as possible. The quality of the imputations depends strongly on the quality of available information. The UIS imputation method takes into consideration the trend over time of a given indicator. In general, using time series information in the imputation of missing data renders an estimate of higher quality than an imputation without such information.

The UIS uses an automated ''single imputation method'' which creates a single estimate to replace the missing value and complete the data set. The following methods can be used:

i) The preferred method is to use statistically correlated indicators to impute the missing value of the given indicator. For example, if the pupil-teacher ratio for total primary education (both public and private sectors) is missing in a given year but data on the public sector are available for another year, the rate of change of the public sector ratio between the two years could be applied to derive

the total pupil-teacher ratio for the missing year. This approach assumes that the pupil-teacher ratio in private primary education changes in the same way as in public primary education.

ii)   Missing values are imputed from available data for the closest year(s) for the indicator in question.
      – If values of the indicator are only available for years prior to the year of the missing value, the most recent year's value is used as the imputed value for the missing year.
      – If values of the indicator are only available for years after the year of the missing value, the earliest year's value is used as the imputed value for the missing year.
      – If values of the indicator are available for years before and after the year of the missing value, data are imputed using linear interpolation between the two years that are closest to the year of the missing data.

iii) Where no information is available for a country, the unweighted regional group mean of the given indicator is used as the imputed value. Because this method is sensitive to the weight of countries in the region, the rule is not applied to countries with substantial relative weights with respect to their region (for example, China in East Asia and the Pacific). In such cases, manual imputation is required even if it results in a non-publishable estimate. Currently such estimates are made for about a dozen countries.

What does it mean if the value is a national estimation?
A national estimation is a value which is the result of an estimation by the country. These estimates are labeled with one dagger (†) in UIS.Stat.

What does it mean if the value is a UIS estimation?
When data are not available from a country, the UIS may produce its own estimations for missing data using established standards. The estimation method used depends on the availability of related data, such as time series data. The resulting value is sent to the country for validation. These estimates are called UIS estimations and are labeled with a double dagger (‡) in UIS.Stat.

What is the difference between the net enrolment rate, the adjusted net enrolment rate and the gross enrolment ratio?
The primary net enrolment rate (NER) is the percentage of children of primary school age who are enrolled in primary education. Net enrolment rates are a measure of enrolment of children in a level of education intended for their age. The primary adjusted net enrolment rate (ANER) is the percentage of children of primary school age who are enrolled in primary or secondary education. It is always greater than or equal to the NER and is used for the calculation of the out-of-school rate (for example, 100% – primary ANER = primary out-of-school rate). The gross enrolment ratio (GER) is the number of children enrolled in primary school expressed as a percentage of the number of primary school-age children. It is both a measure of the capacity of the education system (total enrolment relative to the size of the population of official age for a given level of education) and enrolment of children who are over-age or under-age. The NER and ANER have a range from 0% to 100%, whereas the GER can exceed 100% in cases of over-age or under-age enrolment.

Examples:
• NER: The primary school-age range in a country is from 6 to 11 years. Of 100 children aged 6 to 11, 80 are enrolled in primary education. The primary NER is 80/100=80%.
• ANER: The primary school-age range in a country is from 6 to 11 years. Of 100 children aged 6 to 11, 80 are enrolled in primary education and 5 are enrolled in secondary education. The primary ANER is (80+5)/100=85%.
• GER: The primary school-age range in a country is from 6 to 11 years. Of 100 children aged 6 to 11, 80 are enrolled in primary education. In addition, 30 children younger than 6 years or older than 11 years are enrolled in primary education. In total, 110 children are enrolled in primary education and the primary GER is (80+30)/100=110%.

What is the difference between the net enrolment rate and the net attendance rate?
The net enrolment rate is calculated from the data submitted by national authorities, generally acquired from administrative sources. This data is collected by the UIS in its annual Survey of Formal Education. The net attendance rate is derived from household survey data. Household survey-based education indicators are calculated primarily from data from USAID's Demographic and Health Surveys (DHS) and UNICEF's Multiple Indicator Cluster Surveys (MICS).

School participation in administrative data sources is measured by whether pupils or students are officially registered in a given grade or level of education during the academic reference year. Therefore, indicators of school participation derived from administrative data refer to enrolment: e.g. "net enrolment rate" or "adjusted net enrolment rate". An out-of-school child is a child who was not enrolled in formal primary or secondary school during the reference academic year.

School participation in household surveys and censuses is commonly measured by whether pupils or students attended a given grade or level of education at least one day during the academic reference year. Therefore, indicators of school participation derived from household survey data refer to attendance: e.g. "net attendance rate" or "adjusted net attendance rate". An out-of-school child is a child who did not attend formal primary or secondary school at any time during the reference academic year.

Why is the gross enrolment ratio available for more countries than the net enrolment rate?
The gross enrolment ratio (GER) can be calculated without information on the age of children enrolled in school. It is the number of children enrolled in primary school, regardless of age, expressed as a percentage of the number of children of primary school age. To calculate the net enrolment rate (NER), it is necessary to have information on the ages of all children enrolled in school. The NER is the percentage of children of primary school age who are enrolled in primary education. Because the age of all pupils is not known in all countries, the GER is available for more countries than the NER.

How is the out-of-school rate calculated?
The UIS calculates out-of-school rates for children of primary and lower secondary school age. Children in these age groups who are enrolled in primary or secondary education are counted as in school; children not in primary or secondary education are counted as out of school.

Example: The primary school age range in a country is from 6 to 11 years. Of 100 children aged 6 to 11, 80 are enrolled in primary education and 5 are enrolled in secondary education. 85 children of primary school age are in school and 15 are out of school. The primary out-of-school rate is then 15/100 = 15%.
More about out-of-school children

Why are there two types of out-of-school rates for children of primary or lower secondary school age in the UIS Data Centre?
The UIS Data Centre features out-of-school children estimates calculated from both administrative and household survey sources. Administrative records and household surveys are two data sources which differ in fundamental ways: who collects the data, as well as how, when and for what purpose. As a result, the out-of-school children estimates calculated from one data source may not match those based on other data sources.

Why does the UIS include children participating in pre-primary and non-formal education in its estimates of out-of-school children?
Primary and lower secondary school-age children are considered as being in school if they are enrolled in primary or secondary education.

Children of primary school age who attend pre-primary education are considered to be out of school for several reasons. First, the educational properties of pre-primary education and the pedagogical qualifications of its teaching staff may not meet the standards applied to primary education. Also, enrolment data on pre-primary education are not available for all countries, which makes the calculation of global and regional estimates of pre-primary participation difficult.

Nevertheless, participation in any kind of educational activity is different from no exposure to school at all. UIS.Stat includes an indicator that measures how many out-of-school children of primary school age are in pre-primary education. More about out-of-school children.

Children participating in non-formal education programmes are considered to be out of school primarily because of the nature of these programmes and limited data availability. In addition, non-formal education programmes are more often targeted at older age groups, including adults. Participation in non-formal education can only be considered as being in school if the programme is recognised as equivalent to formal primary or secondary education.

How does the UIS estimate the global demand for teachers?
Currently, the UIS bases its teacher projections on the achievement of Universal Primary Education (UPE) by 2015, which is enshrined in the Millennium Development Goals and Education for All targets that are about to be phased out. These projections are calculated based on the assumption of full enrolment in 2015, using population projections from the United Nations Population Division (UNPD). There is also a quality improvement aspect to the projections, which assumes, from the base year to the target year of projection, (i) a reduction by one-half in primary-level grade repetition and (ii) a pupil-teacher ratio no higher than 40:1. The calculation uses, where available, national annual teacher attrition rates - which generally range between 2.5% and 7.5% - to project the total number of teachers required to achieve UPE. When estimates of the annual teacher attrition rate are not available for a country, an overall rate of 5% is assumed. For the post-2015 period, the projections will be revised to respond to the new demand for teachers expressed in the Agenda 2030 for Sustainable Development Goals and Education 2030.

Where can I learn more about how specific indicators are calculated?
The UIS Glossary provides detailed information for a wide range of indicators including definitions, data requirements, calculation methods, data sources and translations of terms in the six official UN languages. In addition, the glossary provides an explanation of how to interpret the values of a given indicator.

Are cross-nationally comparable statistics on technical and vocational education and training (TVET) available?
It is difficult to provide a comprehensive perspective of the TVET sector given its broad scope and diversity of programmes. Currently, cross-nationally comparable statistics on TVET collected by the UIS only comprise vocational education data and indicators for programmes in the formal education system. Vocational programmes provided by ministries other than education (e.g. ministries of agriculture, health, labour etc.) should be included in UIS surveys of education if they meet the requirements defined by the ISCED and UIS data collection manuals. Often, the main national counterparts of the UIS (i.e. the education ministry or the national statistical office) do not have comprehensive information on formal technical and vocational programmes provided or supervised by other ministries and this is why the UIS encourages its regular national counterparts to collect and include these data in their national submissions. It is important to note that vocational education in the formal education system may represent a small part of the whole TVET sector and therefore it cannot be used as a proxy of all TVET activity. Instead, it would be more appropriate to compare formal TVET provision with general education programmes to analyse the diversity of formal education programmes. The UIS Document Library features the publication "Participation in Formal Technical and Vocational Education and Training Programmes Worldwide: An Initial Study", which describes these measurement problems and explains why traditional education indicators cannot be used to analyse TVET.

4. INTERNATIONAL STANDARD CLASSIFICATION OF EDUCATION (ISCED)

What is ISCED?
The International Standard Classification of Education (ISCED) is the framework used to compare statistics across education systems of countries worldwide. It is an important tool used to facilitate international comparisons and to benchmark progress on international education goals. ISCED covers

formal and non-formal education programmes and any resulting recognised formal educational qualifications. ISCED was first developed by UNESCO in 1976. The classification was updated in 1997, 2011 and 2013. According to the International Family of Economic and Social Classifications, ISCED is a reference classification. The UIS is responsible for the maintenance, updating and revision of ISCED. More about ISCED

Why were there two revisions in 2011 and 2013?
The 2011 revision updated the levels of education programmes (ISCED-P) and introduced a parallel classification of levels of educational attainment (ISCED-A). The 2013 revision updated the fields of education and training (ISCED-F).

What are the main differences between ISCED 1997 and ISCED 2011?
ISCED 1997 has 7 levels of education, while ISCED 2011 has 9 levels of education. Two more tertiary education levels take into account the trend towards Bachelor's-Master's-Doctorate systems. The lowest level of education (ISCED 0) is now called early childhood education and includes a new category of education programmes for very young children. Qualifications have been added as a related unit of classification, and coding schemes are now provided for education programmes, as well as educational attainment. Programme orientation no longer includes the pre-vocational category, and a new sub-category related to ISCED level completion has been introduced. More about ISCED

When was ISCED 2011 implemented?
The UNESCO General Conference adopted ISCED 2011 in November 2011. Over the following two years, the UIS and its data collection partners (Eurostat and OECD) worked with countries to map their education systems to the new classification and revise data collection instruments accordingly. An operational manual and other training materials were also developed. The first international data collections based on the new ISCED were carried out in 2014. Implementation of the new ISCED in household surveys and censuses occurred in 2015.

What are the statistical units of ISCED?
The statistical units of ISCED are the education programmes and, according to ISCED 2011, the resulting qualification. These statistical units are classified into a hierarchy of education levels, based on increasing complexity of educational content.

What are ISCED mappings and where can I find the latest versions?
ISCED mappings are a visual representation of how national programmes of education are classified according to ISCED. All ISCED mappings have been validated by the UIS and the respective country before they are made available on the UIS website. They support the transparency of UIS statistics and also help analysts to better understand and interpret the UIS international education database. The most recent ISCED mappings based on ISCED 1997 can be found here.

Why can't I find ISCED mappings for certain countries on the UIS website?
ISCED 1997 mappings published on the UIS website must be validated by both the UIS and the respective countries. ISCED mappings are typically created based on a country's submission of the UIS Questionnaire on National Education Programmes. The UIS reviews the mapping and, if required, discusses with the country the classification of education programmes to the ISCED standard. Therefore, a country's ISCED mapping may not be on the UIS website because either it is still under review or the relevant information has not been submitted to the Institute.

Are UIS Questionnaires on National Education Programmes submitted every year?
Once the UIS Questionnaire on National Education Programmes has been submitted by a country and has been validated by UIS, the questionnaire does not need to be submitted again, unless there is a change in the education system or new education programmes are introduced. Respondents to the UIS survey are asked to review the latest ISCED mapping each year and to submit a new questionnaire if there are changes.

How can I find the ISCED classification of the degree/qualification that I received from a specific learning institution?
ISCED mappings provide general information about the classification of national education programmes. The latest published mappings are those classified to ISCED 1997 and include information on the qualifications or degrees that are usually obtained upon successful completion of these programmes. Mappings to ISCED 2011 will be published shortly. However, it is important to note that ISCED was designed to facilitate statistical comparison of national education systems at international levels and is not intended as an instrument to assess the equivalence of specific degrees or qualifications obtained in different learning institutions or countries.

5. STATISTICS ON INTERNATIONALLY MOBILE STUDENTS

Where can I find data on mobile students?
The latest UIS data on internationally mobile students can be found in UIS.Stat:
– Click on "Education".
– Click on "International student mobility in tertiary education".
– The tables under the data categories "Inbound students", "Outbound students and "Mobility indicators" feature the UIS data available on mobile students.

What is an "internationally mobile student"? How are "internationally mobile students" different from "foreign students"? Which definition does the UIS use?
An internationally mobile student is an individual who has physically crossed an international border between two countries with the objective to participate in educational activities in a destination country, where the destination country is different from his or her country of origin.

The country of origin can be defined in several different ways (e.g. based on usual residence, citizenship or the country in which specific educational qualifications have been obtained). UNESCO, OECD and Eurostat have agreed that for measuring international mobility in education, the preferred definition should be based on students' education careers prior to entering tertiary education. Where countries are unable to report data according to this definition, they can use the country of usual or permanent residence to determine students' country of origin. Where this too is not possible and no other suitable measure exists, students' country of citizenship can be used as a last resort.

By comparison, foreign students are students who do not have citizenship in the destination (host) country.

Are students who are citizens of the destination country but received their prior upper secondary certificate abroad (i.e. 'Homecoming nationals') counted as internationally mobile students?
Yes. Since 2015 (or data referring to school year ending in 2013) as long as students have physically crossed an international border and enrolled in educational programmes, they are internationally mobile students.

Does the UIS have data on how many students from my country study abroad?
Yes. Host (or destination) countries send data to the UIS on how many internationally mobile students study in their countries and where these students come from. The UIS uses this information to estimate the number of students from a given country who study abroad.

Does the UIS collect data on the number of universities in each country and the number of students in each university?
No. The UIS collects the total number of students enrolled in tertiary-level education programmes in a given country. The UIS does not gather data on the number of universities or the number of students in a particular university.

Why is the number of international students published by the UIS different from the numbers published by the Organisation for Economic Co-operation and Development (OECD) or the Institute of International Education's *Project Atlas*?
The difference between the numbers published by the UIS, OECD and *Project Atlas* is mainly due to differences in definition and coverage of international student data.

Regarding the difference between data published by the UIS and OECD, prior to 2015 (or data referring to school year ending in 2013), the UIS and OECD used different operational definitions of international students. The UIS prioritised using prior education and usual residence to define internationally mobile students, and citizenship was used as the last resort when the two measures did not exist. By comparison, the OECD published data on foreign students, which are defined based on citizenship. Because international students are a subgroup of foreign students by definition, OECD's global number of foreign students was usually higher than the UIS number of internationally mobile students.

However, since 2015 (or data referring to school year ending in 2013) there should be no discrepancies between the numbers published by the UIS and OECD because both organizations have agreed to use the same order of criteria in their operational definitions of internationally mobile students: prior education, usual residence and citizenship.

As far as the difference between the numbers published by the UIS and *Project Atlas* is concerned*,* internationally mobile student data from the UIS include students physically crossing a national border to enrol in a degree or diploma programme at the tertiary level (so called "degree mobile students") and exclude students who are in exchange programmes to undertake part of their studies at educational institutions abroad but are credited at their home institutions (so called "credit mobile students"). In contrast, *Project Atlas* data cover both degree mobile and credit mobile students in tertiary education.

The following example illustrates how different definitions and coverage can impact numbers published by the UIS and IIE. China reported to the UIS that its tertiary education institutions enrolled 96,409 degree-seeking international students in 2013. By contrast, the *Project Atlas* website shows over 356,000 international students in China in 2013, but this number includes not only degree-seeking students but also students who participate in short-term programmes of less than one year.

6. STATISTICS ON EDUCATION FINANCE

Where can I find data on education finance?
The latest UIS data on educational finance can be found in UIS.Stat:
  – Click on "Education".
  – Click on "Financial Resources".
  – The tables under the different categories feature available UIS data on education finance.

UIS work on education finance - including statistical capacity building projects - can be found at Education Finance.

What are the most recent UIS publications on education finance and expenditure?
Publications on education finance include:
  • Financing Education in Sub-Saharan Africa: Meeting the Challenges of Expansion, Equity and Quality.
  • Global Education Digest 2007 (focus on the financing of education, particularly at the primary level of education).

Why are data on education finance and expenditure important?
Data on education finance and expenditure are essential for effectively addressing critical education policy questions. These data help decision makers to determine the financial feasibility of achieving both quantitative and qualitative education goals and decide on how to achieve equity in the provision of

educational opportunities. They are also used to determine which particular financial policies and programmes can have the greatest impact on reaching objectives such as improved access, completion and learning, as well as to recognise the trade-offs and implications that can arise from the implementation of any particular set of education financing decisions.

What does the UIS data collection on education expenditure include?
The UIS data collection on finance statistics covers the following:

– Expenditure on education by source: government (central, regional, local), international (foreign donors) and private (households and other private entities such as NGO or corporations).
– Expenditure on education by type of funding flow: direct expenditure for public and private educational institutions, and transfers between sources of funding.
– Expenditure on education by nature in public and private educational institutions: staff compensation (teachers and non-teachers), current expenditure other than staff compensation (school books and teaching materials, ancillary services, and administration and other costs), and capital expenditure.
– Household expenditure on educational goods and services purchased outside educational institutions (e.g. teaching materials, uniforms, or private classes outside of school).

Data on public and international education expenditure are derived from administrative records compiled typically by the ministry of finance, ministry of education or national statistical office, whereas data on private household expenditure are derived from household expenditure surveys usually run by national statistical offices.

For more information on definitions and concepts related to education finance statistics, please refer to the Instruction Manual: Survey of Formal Education (2014) and UOE Data Collection on Formal Education: Manual on concepts, definitions, and classifications (2015).

Which indicators are traditionally used to measure governmental efforts toward education?
Two of the most common indicators used to measure government investment in education are:

• Expenditure on education as a percentage of gross domestic product (GDP), which represents - in a broad sense - the availability of resources for education; and
• Expenditure on education as a percentage of total government expenditure (all sectors), which represents the commitment of governments to education compared to other public spending priorities.

Which indicators are traditionally used to compare public expenditure per student among countries?
Two of the most common indicators used for international comparison of the allocation of financial resources per student are:

• Government expenditure per student as a percentage of GDP per capita, which allows the analysis of average government spending compared to national income levels; and

• Government expenditure per student in purchasing power parity dollars (PPP$), which allows for direct comparison across countries of the relative value of the funding provided annually for education. PPP is a rate of currency conversion which eliminates differences in price levels among countries. This means that a given sum of money, when converted into U.S. dollars at PPP rates, will buy the same basket of goods and services in all countries.